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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,542	01/12/2006	Erich Klein	AT030039	1871
65913	7590	05/08/2009	EXAMINER	
NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			ROBINSON, RYAN C	
			ART UNIT	PAPER NUMBER
			2614	
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			05/08/2009	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/564,542	<b>Applicant(s)</b> KLEIN, ERICH	
	<b>Examiner</b> RYAN C. ROBINSON	<b>Art Unit</b> 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/12/2006</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/23/2009 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 recites the limitation "a portion of the sound-delivery chamber *that opens* to the first housing region". There is insufficient antecedent basis for this limitation in the claim, since neither claim 5 nor its parent claim 1 suggests an opening in the first housing region.

### ***Double Patenting***

3. Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,628,790.

Instant application No. 10/564,542	Patent No. 6,628,790
A hand-held communication device comprising:  a loudspeaker to generate and deliver	An apparatus which is adapted to emit sound,  <i>and which is adapted to be used in an on-</i>

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<p>sound in an against-the-ear mode, into a space bounded by an ear and, in an away-from-the-ear mode, into an acoustic free space,</p> <p>a hand-held housing that includes;</p> <p>a sound-collecting chamber that encloses at least a portion of the loudspeaker,</p> <p>a first housing region to convey, in the against-the-ear mode, the sound generated by the loudspeaker into the acoustic free space without being blocked by the ear,</p> <p>a second housing region that does not comprise the first housing, region, to convey the sound generated by the loudspeaker in the against-the-ear mode to the space bounded by the ear,</p> <p>a sound-delivery chamber to convey the sound generated by the loudspeaker, in the away-from-the-ear mode through the first holding housing region into the acoustic free space, the sound delivery chamber to amplify the sound conveyed into the acoustic free space relative to the sound conveyed into the space bounded by the ear,</p> <p>a first duct to convey the sound generated by the loudspeaker, in the against-the-ear mode, from the sound-delivery chamber and through the second housing region into the space bounded by the ear, and</p> <p>a second duct to convey the sound generated by the loudspeaker from the sound-collecting chamber to the sound-delivery chamber, in both the against-the-ear mode and the away-from-the-ear mode.</p>	<p><i>ear mode and in an off-ear mode,</i></p> <p><i>and which has a housing (2) having housing walls,</i></p> <p><i>and which includes a holder compartment (6) which is accommodated in the housing (2)</i></p> <p><i>and which is bounded by a bounding wall (7) formed with at least one internal sound port (10, 11),</i></p> <p><i>and which has an outer wall (3) which is spaced at a distance from the bounding wall (7) and which together with the bounding wall (7) bounds an intermediate space (14)</i></p> <p><i>and has at least one external sound port (15, 16) which during use of the apparatus (1) in the on-ear mode by a user is to be held so as to face the inner part of the auricle of the user,</i></p> <p><i>and which has at least one additional external sound port (19) between the bounding wall (7) and the outer wall (3), through which port the sound waves can emerge in directions substantially parallel to the bounding wall (7) and to the outer wall (3),</i></p> <p><i>and which includes an electroacoustic transducer (20) for the generation of sound, which transducer is accommodated in the holder compartment (6)</i></p> <p><i>and can generate sound waves which can be emitted through the at least one internal sound port (10, 11) into the intermediate space (14) and from the intermediate space (14) through the at least one external sound port (15, 16) and through the at least one additional external sound port (19),</i></p> <p><i>and which includes at least one signal source (30, 35) adapted to drive the electroacoustic transducer (20) with at least one useful signal,</i></p> <p><i>characterized in that the bounding wall (6) has at least one additional internal sound port (22),</i></p> <p><i>and the holder compartment (6) accommodates a second electroacoustic transducer (25) for the generation of sound, by means of which second electroacoustic transducer sound waves can be generated which can be</i></p>
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	<p>emitted through the at least one additional internal sound port (22),</p> <p>and application means (38) have been provided with the aid of which a useful signal to be applied to the first transducer (20) can always be applied to the first transducer (20) in a first phase relationship and with the aid of which a useful signal to be applied to the second transducer (25) can also be applied to the second transducer (25) in a first phase relationship but, in additional, also in a second phase relationship opposite to the first phase relationship, and control means (41) have been provided which ensure that in the off-ear mode a useful signal is applied to the second transducer (25) in the first phase relationship and in the on-ear mode a useful signal is applied to the second transducer (25) in the second phase relationship.</p>
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4. Although the conflicting claims are not identical, they are not patentably distinct from each other because since the speaker is in a holder compartment in 6,628,790, it would be considered by one of ordinary skill as a sound-collecting chamber. Furthermore, it would have been obvious to construct the sound delivery chamber to amplify the sound to be at a higher level into the acoustic free space, since it is well known that a hands-free mode requires a louder sound level than an against the ear mode, by amplifying the sound conveyed into the acoustic free space relative to the sound conveyed into the space bounded by the ear.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**6. Claims 1-8 and 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erixon et al., U.S. Patent No. 7,233,678, filed on 6/8/2002, (hereby Erixon).**

7. As to claim 1, Erixon teaches a hand-held communication device comprising: a loudspeaker (16) to generate and deliver sound in an against-the-ear mode, into a space bounded by an ear and, in an away-from-the-ear mode, into an acoustic free space, a hand-held housing (12) that includes; a sound-collecting chamber that encloses at least a portion of the loudspeaker; (The sound collecting chamber is formed by the space between elements [26] and [24]), a first housing region (12) to convey, in the against-the-ear mode, the sound generated by the loudspeaker (16) into the acoustic free space without being blocked by the ear, a second housing region (20) that does not comprise the first housing, region, to convey the sound generated by the loudspeaker (16) in the against-the-ear mode to the space bounded by the ear, a sound-delivery chamber (22) to convey the sound generated by the loudspeaker (16), in the away-from-the-ear mode through the first holding housing region (12) into the acoustic free space, a first duct (17) to convey the sound generated by the loudspeaker (16), in the against-the-ear mode, from the sound-delivery chamber (22) and through the second housing region (20) into the space bounded by the ear, and a second duct

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(28) to convey the sound generated by the loudspeaker (16) from the sound-collecting chamber to the sound-delivery chamber (22), in both the against-the-ear mode and the away-from-the-ear mode. It is noted that Erixon does not explicitly disclose that the sound delivery chamber amplifies the sound conveyed into the acoustic free space relative to the sound conveyed into the space bounded by the ear. Examiner takes official notice that it would have been well known to construct the sound delivery chamber to amplify the sound to be at a higher level into the acoustic free space, since it is well known that a hands-free mode requires a louder sound level than an against the ear mode. Therefore it would have been obvious, at the time of applicant's invention to amplify the sound conveyed into the acoustic free space relative to the sound conveyed into the space bounded by the ear.

8. As to claim 2, Erixon remains as applied above.

Erixon further teaches that the second duct (28) opens at one end into the sound-collecting chamber and at another end into the sound-delivery chamber (22), and the sound delivery chamber to amplify the sound conveyed by the second duct from the loudspeaker and to convey the amplified sound through the first housing region into the acoustic free space (See rejection of claim 1 above).

9. As to claims 3 and 4, Erixon remains as applied above.

Erixon does not explicitly disclose specific dimensions for the second duct and sound delivery chamber, however, Erixon does not limit the size for the duct and sound

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delivery chamber. Therefore, it would have been obvious to one of ordinary skill in the art to construct the second duct and sound delivery chamber to any suitable size, including a rectangular flow cross-section, having a width in a range from 5 mm to 8 mm and a height in a range from 0.3 mm to 0.7 mm, for the duct; and the sound-delivery chamber with a volume in a range from 0.01 ccm to 0.4 ccm, depending on the application.

10. As to claim 5, Erixon remains as applied above.

Erixon does not explicitly disclose a cover having an acoustic friction to cover a portion of the sound-delivery chamber that opens to the first housing region, and is silent as to the cross section dimensions of the sound delivery chamber. However, examiner takes official notice that it would have been well known in the art to provide a cover on an opening of a duct on a hand-held communication device for protection, and inherently that cover would create acoustic friction. Therefore, it would have been obvious to one of ordinary skill at the time of applicant's invention to provide a cover having acoustic friction to cover a portion of the sound-delivery chamber that opens to the first housing region. Furthermore, it would have been obvious to construct the cross section of the sound delivery chamber to any suitable size, including a cross section that is larger than a cross section of the second duct.

11. As to claim 6, Erixon remains as applied above.



Erixon further teaches that the first duct (17) is defined by a boundary wall of the sound-delivery chamber (22), and the sound-delivery chamber (22) to amplify the sound conveyed through the first housing region (12) into the acoustic space to a greater extent than the sound conveyed by the second duct through the second housing region into the space bounded by the ear (The sound outlet at the first housing region is closer to the sound delivery chamber, and therefore the sound will be amplified at a greater extent.)

12. As to claim 7, Erixon remains as applied above.

Erixon does not explicitly disclose specific dimensions for the first duct, however, Erixon does not limit the size for the first duct. Therefore, it would have been obvious to one of ordinary skill in the art to construct the first duct with any suitable size, including a flow cross-section area in the range between  $1 \text{ mm}^2$  and  $5 \text{ mm}^2$ , depending on the application.

13. As to claim 8, Erixon remains as applied above.

Erixon does not explicitly disclose that the first duct is covered along the inside of the sound delivery chamber with a cover that has an acoustic friction. However, examiner takes official notice that it is well known in the art to provide a cover having acoustic friction on an acoustic duct to adjust acoustical properties. Therefore, it would have been obvious to one of ordinary skill in the art to cover the first duct with a cover having acoustic friction, in order to achieve a desired acoustical property.

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14. As to claim 12, Erixon remains as applied above.

Erixon further teaches an acoustically-sealed rear chamber (21) that is on an opposite side of the loudspeaker (16) relative to the sound-collecting chamber, and that seals (26) an air volume situated on the opposite side of the loudspeaker.

15. As to claim 13, Erixon remains as applied above.

Erixon further teaches the loudspeaker (16) separates the sound-collecting chamber from the rear chamber (21).

16. As to claim 14, Erixon remains as applied above.

Erixon does not explicitly disclose that the second duct and the sound-delivery chamber form a resonator that amplifies sound generated by the loudspeaker in a frequency range of between about 4 kHz and 10 kHz. However, examiner takes official notice that it is well known in the art to design acoustic chambers with appropriate resonances to achieve the desired acoustical effect. Therefore, it would have been obvious to one of ordinary skill to form the sound-delivery chamber as a resonator to amplify any suitable range of frequencies, including between about 4 kHz and 10 kHz.

17. As to claim 15, Erixon remains as applied above.

Erixon further teaches that the second duct (28) and the sound-delivery chamber are arranged to reduce the sound pressure (22) in the sound-delivery chamber, relative to sound pressure in the sound-collecting chamber, since the sound delivery chamber is open to free space via (17) and (19).

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18. As to claim 16, Erixon remains as applied above.

Erixon discloses a hand-held housing (12), and a sound delivery chamber (22) to convey the sound generated by the loudspeaker (16), in the away-from-the-ear mode, through the first housing region (12) into the acoustic free space, and a duct (28) to convey the sound generated by the loudspeaker (16) from the sound collecting chamber to the sound delivery chamber (22), in both the against-the-ear mode and the away-from-the-ear mode. It is noted that Erixon does not disclose an additional second sound delivery chamber, as well as an additional third duct. However, Examiner takes official notice that it would have been obvious to one of ordinary skill in the art to provide an additional second sound delivery chamber, as well as an additional third duct, to provide for a greater number of sound outlets.

19. As to claim 17, Erixon remains as applied above.

Erixon further teaches a duct (17) to convey the sound generated by the loudspeaker (16), in the against-the-ear mode, from the other sound-delivery chamber (22) and through the second housing region (20) into the space bounded by the ear. It is noted that Erixon does not disclose an additional fourth duct. However, Examiner takes official notice that it would have been obvious to one of ordinary skill in the art to provide an additional fourth duct, to provide for a greater number of sound outlets.

20. As to claim 18, Erixon remains as applied above.

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Erixon further teaches that the sound delivery chamber (22) is further to amplify the sound conveyed by the second duct from the loudspeaker (See the rejection of claim 1), and to convey the amplified sound through the first housing region (12) into the acoustic free space, and wherein, in the away-from-the-ear mode, the other sound delivery chamber conveying the sound through the first housing region into the acoustic free space. It is noted that Erixon does not explicitly teach that the other sound delivery chamber is further to amplify the sound conveyed by the third duct from the loudspeaker. Examiner takes official notice that it would have been well known to construct the sound delivery chamber to amplify the sound to be at a higher level into the acoustic free space, since it is well known that a hands-free mode requires a louder sound level than an against the ear mode. Therefore it would have been obvious, at the time of applicant's invention to amplify the sound conveyed into the acoustic free space relative to the sound conveyed into the space bounded by the ear.

21. As to claim 19, Erixon remains as applied above.

Erixon teaches that the sound delivery chamber is further to amplify the sound conveyed through the first housing region into the acoustic free space to a greater extent than the sound conveyed by the second duct through the second housing region into the space bounded by the ear. It is noted that Erixon does not explicitly teach that the other sound delivery chamber is not to amplify the sound. Examiner takes official notice that it would have been obvious, at the time of applicant's invention, to amplify

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the sound conveyed by both the first and second sound delivery chamber for the same reasons as the rejection of claim 1, since both chambers serve the same function.

**22. Claims 9-11, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erixon et al., U.S. Patent No. 7,233,678, filed on 6/8/2002, (hereby Erixon), in view of Clark, U.S. Patent No. 6,134,336, published on 10/17/2000 (hereby Clark).**

23. As to claim 9, Erixon remains as applied above.

Erixon does not explicitly disclose a sound deflector or sound deflection means disposed at least partly inside the second housing region to deflect the sound delivered through the second housing region into the space bounded by an ear, from said space into the acoustic free space. However, using sound deflection means to improve the frequency response in a communication device is well known in the art. Clark teaches a sound deflection means (502) to deflect the sound going into the space bounded by an ear (122) to the acoustic free space (204). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of applicant's invention, to incorporate into the communication device of Erixon, the deflection means taught by Clark, for the added feature of improved frequency response (Clark: Col. 6, lines 43-46).

24. As to claim 10 the combination of Erixon and Clark remains as applied above.

The combination of Erixon and Clark teaches that the sound deflector includes a sound-deflection chamber (Clark: 502) that is open at least to the first housing region, and a deflection duct that opens at its one end into the sound-deflection chamber and at another end into the space bounded by the ear (122).

25. As to claim 11 the combination of Erixon and Clark remains as applied above.

The combination of Erixon and Clark does not explicitly teach a cover that covers the cross section of the deflection duct, that has an acoustic friction, and is provided in the region of the opening of the deflection duct into the sound-deflection chamber, However, examiner takes official notice that it is well known in the art to provide a cover on an opening of a duct on a hand-held communication device for protection, and inherently that cover would create acoustic friction. Therefore, it would have been obvious to one of ordinary skill to provide a cover having acoustic friction in the region of the opening of the deflection duct into the sound-deflection chamber.

26. As to claim 20, Erixon remains as applied above.

Erixon does not explicitly disclose a sound deflector or sound deflection means disposed at least partly inside the second housing region to deflect the sound delivered through the second housing region into the space bounded by an ear, from said space into the acoustic free space, the sound deflector including a sound-deflection chamber that is open to at least the first housing region, and a deflection duct that opens at one end into the sound deflection chamber and at another end into the space bounded by

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the ear. However, using sound deflection means to improve the frequency response in a communication device is well known in the art. Clark teaches a sound deflection means (502) to deflect the sound going into the space bounded by an ear (122) to the acoustic free space (204), the sound deflector includes a sound-deflection chamber (Clark: 502) that is open at least to the first housing region, and a deflection duct that opens at its one end into the sound-deflection chamber and at another end into the space bounded by the ear (122). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of applicant's invention, to incorporate into the communication device of Erixon, the deflection means taught by Clark, for the added feature of improved frequency response (Clark: Col. 6, lines 43-46).

### ***Response to Arguments***

27. Applicant's arguments filed 3/23/2009 have been fully considered but they are not persuasive. Applicant submits that the prior art (Erixon U.S. Patent No. 7,233,678), as well as U.S. Patent No. 6,628,790 do not teach that the sound delivery chamber amplifies the sound generated by the loudspeaker. The prior art discloses all the claimed structural features, and since the amplification is a functional feature with no corresponding claimed structural feature, a chamber that "amplifies the sound", is interpreted as any chamber that discloses the claimed *structural* features.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the size of the chamber relative to amplifying the sound) are not recited in the

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rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regarding applicant's argument that antecedent basis is present for claim 5, Examiner respectfully disagrees. Although a sound-delivery chamber is recited in parent claim 1, there is no limitation of an opening recited.

### ***Conclusion***

The prior art made of record

- |    |                  |                  |
|----|------------------|------------------|
| a. | US Patent Number | <b>7,233,678</b> |
| b. | US Patent Number | <b>6,134,336</b> |

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan C. Robinson whose telephone number is (571) 270-3956. The examiner can normally be reached on Monday through Friday from 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz, can be reached on (571) 272-7499. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.



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Ryan Robinson

/R. C. R./  
Examiner, Art Unit 2614

/Suhan Ni/  
Primary Examiner, Art Unit 2614